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UCRL-CONF-204593

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June 9, 2004

American Nuclear Society 2004 Winter Meeting
Washington, DC, United States
November 14, 2004 through November 18, 2004

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INTRODUCTION

Preservation of criticality safety technical information in a database format is of great importance in assisting new generations of criticality safety professionals to continue maintaining and upgrading their technological basis. In order to disseminate the information timely and conveniently to a wider cycle of criticality safety engineers, the database should be in such a format for easy electronic access through the world wide web forum. Since early 1970s, the criticality safety group at Lawrence Livermore National Laboratory has accumulated the bibliographical technical references in a database format.

Originally, this reference database was intended to help our criticality safety professionals for their research and development work. About four years ago as part of the U.S. Department of Energy's Nuclear Criticality Safety Program this electronic database was made available to the criticality safety community.

The purpose of this paper is to report the effort of the last few years to expand the database and to improve the electronic retrieval capabilities to assist the users of the database. Needless to say, maintenance of such a database is tedious and generally a thankless job. However, anyone who is in the technology development areas definitely know the immense value of such a tool to help his/her work.

DESCRIPTION OF THE ACTUAL WORK

A bibliographic criticality safety database is available on the Internet as part of the U.S. Department of Energy's (DOE) Nuclear Criticality Safety Program (NCSP). The Lawrence Livermore National Laboratory (LLNL) maintains this Web database as part of the *Information Preservation and Dissemination* task, prescribed in the DOE's Nuclear Criticality Safety Program Five Year Plan. This database and other criticality safety resources are available at http://ncsp.llnl.gov. At the time of the initial installation on the Web site the bibliographic database contained about 4600 records and has now been expanded to include more than 11,000 records. The compilation of this bibliographical criticality safety database represents a consolidated effort of many years since 1970s.

For the current update, the database was expanded by use of various resources including, for example:

- Reference lists in documents such as "Nuclear Criticality Safety Guide" LA-12808 and "A Review of Criticality Accidents," LA-13638.
- Papers presented at various conferences such as the American Nuclear Society meetings and the International Conferences on Nuclear Criticality Safety.
- Papers published in ANS publications, *Nuclear Science & Engineering* and *Nuclear Technology*.
- Printed bibliographies such as "CRITICALITY STUDIES, A Literature Search," TID-3533.
- Online searching
- Input from criticality safety professionals.

RESULTS

This effort has produced an expansion of "vintage documents" published in the 1940s and 1950s to now include 1350 records. While many of these reports do not contain technical data of value according to present-day standards, they document techniques of calculation and analysis that are of historical interest. Some, however, contain results of experimental work and others report on criticality accidents or incidents. The papers published at conferences or in ANS journals are added to the database as the publications become available. The online searching has helped to identify more recent publications and helped to update the listings besides locating some early work. A modest number of publications have been identified that include references to full-text documents and the links will be provided in the next update to the database. Each data record includes author, title, report, and date. The database also includes conference/journal and other items such as ANS session, source, ID, and key terms for data search. A data search engine was also provided in the NCSP website to help the users find the references of interest to them.

The publication frequency of records in the NCSC bibliographic database is illustrated in TABLE I. The publication frequency continues to increase. (At the time of this paper the decade of 2000 includes only three partially-complete years.)

Decade	Records
1940	157
1950	1454
1960	1494
1970	2063
1980	2398
1990	3686
2000*	421
Total	**11673**

TABLE I. Publication frequency of reports in the NCSC bibliographic database

This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.